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PLANT IMMIGRANTS.

No. 162. OCTOBER, 1919.

GENERA REPRESENTED IN THIS NUMBER.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by agricultural explorers and foreign correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,
Agricultural Explorer in Charge

Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.

Issued October 20, 1919, Washington, D.C.

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Achradelpha mammosa (Sapotaceae), 47956. **Sapote.** From San José, Costa Rica. Presented by Mr. Carlos Wercklé, through Mr. José C. Zeledon. "Few other fruits are of such importance to the natives of Mexico and Guatemala as the **sapote**, which grows wild in the forests of Guatemala, Tabasco, and Chiapas. It is often cultivated, but much of the fruit consumed in these regions is gathered from wild trees. Elsewhere in tropical America it is planted in gardens, notably in Cuba where it is a favorite fruit. The Central American common name, 'zapote' (spelled sapote in English), is taken from the Aztec 'tzapotl,' a generic name applied by the ancient Mexicans to all soft, sweet fruits. In Cuba it is called 'mamey sapote' and 'mamey colorado.' The sapote is a large tree, sometimes attaining 80 or 90 feet in height. It thrives only in regions where the climate is warm and rather moist; it can not stand the cold winters of California, and for some reason it has not succeeded in southeastern Florida, although it is apparently not the cold that interferes with its growth in the latter region. The fruits are the size of small muskmelons, but elliptic in form; they have a rough, russet-brown outer covering about an eighth of an inch thick; soft, melting, salmon-colored or reddish flesh, sweet, and of rich flavor; and a single large, elliptic, glossy brown seed. A poor **sapote** resembles a squash in taste, but a good one has a rich and pleasant flavor. The fruit is eaten fresh, made into jam, or frozen to form a sherbet." (Popenoe.)

For previous introduction and description see S. P. I. No. 39357, Plant Immigrant Bulletin, No. 102, October, 1914, p. 817.

Agathosma chortophila (Rutaceae), 47952. From Burttholm, Vereeniging, Transvaal, South Africa. Seeds presented by Mr. J. Burtt-Davy. "Leaves of various species of Agathosma, of the Cape region, are used like buchu, [the source of barosma camphor], but are of a more delicate and agreeable odor." (National Standard Dispensatory, 1905, p. 1335.)

For fuller discussion of buchu see pp. 1480, 1481, of the previous number (161) of the Plant Immigrants.

Aleurites trisperma (Euphorbiaceae), 47942. **Banucalag.** From Mayaguez, Porto Rico. Seeds presented by Mr. W. D. May, Porto Rico Experiment Station. "You sent us, in 1909, seed of *A. trisperma*, under S. P. I. No. 26050.

This introduction is producing more seed than *A. fordii* or *A. moluccana,* and I am sending you a bag of it. It grows well with us and the seed is easily gathered." (May.)

"This is a strictly tropical species of very limited distribution, and is reported to fruit rather irregularly and less prolifically than the true lumbang, *A. moluccana,* the more common, hard-shelled species. The shell of the seed is much thinner and more easily broken than that of the common lumbang, and the oil obtained from the kernel is said to be very similar in drying properties to that of *A. fordii,* the tung-oil tree of China." (R. A. Young.)

For previous introduction and distribution, see S. P. I. No. 44061, Plant Immigrant Bulletin, No. 129, January, 1917, p. 1107.

Amygdalus davidiana (Amygdalaceae), 47949. From Dundee, Ill. Presented by the D. Hill Nursery Co., who purchased them from the Yokohama Nursery Co., Yokohama, Japan. Seeds of the davidiana peach, part of a shipment secured for stock purposes. The Yokohama Nursery Co. presumably obtained the seeds from China. So far as the Department is informed, this is the first commercial introduction of davidiana peach pits into the United States.

For previous introduction and description see Plate No. 194, Plant Immigrant Bulletin, No. 121, May, 1916.

Anaxagorea brevipes (Annonaceae), 47959. From Georgetown, Demerara, British Guiana. Presented by Mr. J. B. Harrison, director, Science and Agriculture Department, Botanic Gardens. "Black Yarri-yarri." A tree with yellow, medium hard wood which is used for fishing rods. (Adapted from Journal of the Board of Agriculture of British Guiana, July, 1918, vol. 11, p. 99.)

Bauhinia sp. (Caesalpiniaceae), 47940. Plants growing at the Yarrow Plant Introduction Field Station, Rockville, Md., from seeds collected by Dr. J. N. Rose, associate curator, National Herbarium. "No. 22119. August, 1918. This plant was very common on the dry hills above Huigra, Ecuador, associated with Cacti, Fourcroya, and other semi-arid plants. It forms a small round bush about 3 or 4 feet high with the characteristic two-lobed leaf of the Bauhinia. The

flowers are borne in small clusters of fours or fives and suggest, in a way, small red-flowered fuchsias. The calyx is cut on one side and is pushed off the petals like a spathe. The petals which are nearly an inch long are spread only a little at the tip and at first suggest a tubular flower. The plant was seen nowhere else although it was quite common at Huigra at an altitude of about 4,000 feet. The flowers are so attractive that we believe it might prove a valuable addition to our ornamentals, especially in the semi-arid region of the southwestern United States." (Rose.)

Casimiroa sp. (Rutaceae), 47957. From Los Angeles, Calif. Budwood presented by Mr. Milo Baker. "Budwood from a tree grown from a cutting received from Central America some years ago and budded into a white sapote tree. This budded tree is fruiting this year for the second time. The fruit is practically seedless and about the size of a small apple; the entire fruit is edible, and very rich. The tree seems to be a vigorous grower and a prolific fruiter." (Baker.)

The cuttings received are more pubescent than those of the common *C. edulis* (the white sapote), and I suspect they belong to one of the other species of this genus,- probably *C. sapote* or *C. tetrameria*. It is not rare for the white sapote to produce seedless fruits and, so far as I know, the other species of Casimiroa produce fruits much like those of the white sapote in character." (Popenoe.)

Cassia angustifolia (Caesalpiniaceae), 47974. **Senna.** From Tangier, Morocco. Seeds presented by Mr. J. Goffart. This plant is one of the sources of the drug known as senna. It is grown extensively in India and Arabia. Watt, in his Commercial products of India, says of its culture: "It is sown on red or black clay loams, fairly liberally plowed and manured, the sowing being in May. Weeding has to be attended to, but irrigation is hardly, if ever, necessary. The season for collecting the leaves is June to December."

Cucumis melo (Cucurbitaceae), 47946. **Muskmelon.** From Fresno, Calif. Presented by Mr. A. C. Jewett. "No. 1. A variety of Afghan melon which matures very late in the fall. It is very superior to the common run of melons." (Jewett.)

For previous introduction and description, see S. P. I. No. 46029, Plant Immigrant Bulletin No. 146, June, 1918, p. 1327.

Eugenia sp. (Myrtaceae), 47970. From Puerto Bertoni, Paraguay. Seeds presented by Dr. Moises S. Bertoni. "Native name in Guarani, 'Anyangapirihapuá.' A species with round cherry-colored fruit; a low shrub, very resistant to cold; fruit good." (Bertoni.) See Plate 248.

Manihot tweedieana (Euphorbiaceae), 47971. From Puerto Bertoni, Paraguay. Seeds presented by Dr. Moises S. Bertoni. "Native name in Guarani, 'Gwasú-mandió.' The Indians claim that by subjecting this species to annual cultivation, in a few years they obtain an edible variety." (Bertoni.)

Ocotea rodiei (Lauraceae), 47962. From Georgetown, Demerara, British Guiana. Presented by Mr. J. B. Harrison, director, Science and Agriculture Department, Botanic Gardens. "Bibiru, Greenheart." A well-known tree which grows to a large size. The wood is used for wharf piles, in shipbuilding, and in other constructional work. (Adapted from Journal of the Board of Agriculture of British Guiana, July, 1918, vol. 11, p. 106.)

Oenocarpus bataua (Phoenicaceae), 47965. **Palm.** From Belem, Parà, Brazil. Presented by Dr. J. Simão da Costa. A tall, majestic tree with a large, smooth trunk generally distinctly ringed; the leaves are terminal, pinnatisect, with linear segments; the spadices spring from beneath the leaves, and are simply branched; the spathe is large, fusiform, and woody, and falls off as soon as the spadix escapes from it; the flowers are monoecious, and the fruit is nearly globular, one seeded, and the flesh is edible. All species of this genus afford oil and "yukissé" (palm-drink) from the fruits and they are also used for various other purposes. The leaves serve as a thatch, and from the nerves of the decayed petioles the Indians make arrows for their blowpipes. The oil is colorless and sweet, and not only excellent for lamps but also for cooking. The shopkeepers of Pará buy these oils from the Indians, and mix them in equal proportions with olive oil retailing the whole as olive oil from which even the

TROPICAL COMBRETUM RECOVERING FROM THE FREEZE IN FLORIDA. (COMBRETUM COMOSUM. SEE S. P. I. NO. 28288.)

This extremely ornamental flowering shrub in its native home, Mauritius, is never subjected to frost. Its behavior in Miami, Fla., under a temperature of 26.5° F. was remarkable. Its leaves, normally bright green, turned ashen gray within 48 hours, and it was apparently quite dead, but in a month's time it had sent out the new shoots shown in this illustration. Resistance to frost is shown in a variety of ways by strictly tropical vegetation. (Photographed by Mr. David Fairchild at Miami, Fla., March 9, 1917; P20475FS.)

THE BRAZILIAN GRUMICHAMA AFTER THE HEAVY FREEZE AT BUENA VISTA, FLA. (EUGENIA DOMBEYI. SEE S. P. I. NO. 37836.)

Brought from the Bahian region of southern Brazil by Dorsett and Popenoe, where the jaboticaba is at home, and withstanding a temperature of 26° F., this Brazilian fruit tree promises to be a success in southern Florida. Its agreeable fruits, combined with its hardiness, entitle it to a wide trial. (Photographed by Mr. David Fairchild at Buena Vista, Fla., February 3, 1917; P20396FS.)

best judges can scarcely distinguish it. For frying fish this oil is equal either to olive oil or butter. The tree is native to the Amazon valley, at an altitude of not more than 1,600 feet above sea level. (Adapted from Seemann, Popular History of the Palms, p. 270.)

Olearia furfuracea (Asteraceae), 47958. From Avondale, Auckland, New Zealand. Seeds presented by Mr. H. R. Wright. A freely branching ornamental shrub or small tree, 6 to 20 feet high, native to the North Island of New Zealand. The alternate leaves, 2 to 4 inches long by 1 to 2 inches broad, vary in shape from oblong to broadly ovate. They are coriaceous, green above, and clothed below with a dense silvery tomentum. The small heads of white flowers are borne in large, much-branched corymbs on long slender peduncles. (Adapted from Cheeseman, Manual of the New Zealand Flora, p. 284.)

Parkia timoriana (Mimosaceae), 47948. **Cupang.** From Zamboanga, P. I. Seeds presented by Mr. P. J. Wester, agricultural advisor. "A handsome timber tree, the seeds of which are roasted and used for coffee." (Wester.)

It is a rapid-growing tree, reaching a maximum height of 120 feet. It bears feathery bipinnate leaves and small white flowers in dense pear-shaped heads. The long, black, pendulous pods are over a foot long and are relished by cattle. The soft white wood is used for making matches.

Parthenium argentatum (Asteraceae), 47955. **Guayule.** From Saltillo, Mexico. Seeds presented by the Cia. Explotadora de Caucho Mexicano, through the American consul, Mr. H. C. Morgan. "Seeds from the **guayule** plant which yields a certain kind of commercial rubber. The seeds were collected from this year's flowers." (Morgan.)

Solanum chacoense (Solanaceae), 47972. **Potato.** From Puerto Bertoni, Paraguay. Seeds presented by Dr. Moises S. Bertoni. "The tubers, thicker than those of *S. commersonii*, have a strong flavor and are not usually eaten. But, under cultivation, there appear at times edible tubers (with a potato flavor); this happens sometimes in the wild state, but as an unstable variation, according to my results. It is a plant worth studying, especially by crossing with the common potato, for in this region it is not attacked by any

disease or insect; it produces two or three times a year, and thrives in dry and rather poor soils, where the common potato is not resistant." (Bertoni.)

Solanum quitoense (Solanaceae), 47951. **Naranjilla.** From Guayaquil, Ecuador. Seeds presented by Dr. H. R. Carter, assistant surgeon general, U. S. Marine Hospital, Baltimore, Md., who secured them from Dr. M. E. Connor, Guayaquil. "The fruit of the **naranjilla** is about the size of a mandarin orange; it is orange-yellow, but not flattened as much as the mandarin. The interior resembles that of a tomato or eggplant. I was told by Mr. Elizade, secretary of state of Ecuador, that it grew in the warm countries near Quito, i. e., at a lower altitude, and I feel reasonably sure that I saw a growing plant in the barren country on the upper Magdalena near Giradot, Colombia, but having no opportunity to examine it I am not positive. This plant resembled a large eggplant 4 to 5 feet high and was covered with fruit, some yellow and some green. I am told, by the same man, that it fruits when young, i. e., the first season, and from what I heard I thought it might do so from Thomasville, Georgia southward, and in southern California. The fruit, which ripens in July, is too acid to be eaten out of hand, although I liked it, but it is used as a flavor for frescos (soft drinks) and ice cream." (Carter.)

For previous introduction and description, see S. P. I. No. 42034, Plant Immigrant Bulletin, No. 118, February, 1916, p. 968.

Virola sebifera (Myristicaceae), 47966. **Ucuuba.** From Belem, Pará, Brazil. Presented by Dr. J. Simão da Costa. A tree inhabiting the lowlands of the lower Amazon which produces in June and July a fruit about the size of a cherry with a brown paper-thin shell. This fruit contains an abundance of oil and stearin and, since each tree produces about 2 barrels of nuts a week during the fruiting season, this seems to be a promising source of soap material. The timber also is valuable, being hard and dense, and reddish brown in color, almost like mahogany. (Adapted from Lange, Lower Amazon, pp. 34, 407, 467.)

Notes on Behavior of Previous Introductions.

The following letter was received January 31,

1918, from Mr. L. A. Walton, Yuba City, California:

"I have received some of the *Amygdalus davidiana* (S. P. I. No. 34515) Chinese peach seedlings from the Chico Plant Introduction Garden each year for the past four years. I received the first shipment, about 50 trees, in February, 1915, and planted them all in alkali ground in different parts of my orchard where I had not been successful in growing other varieties of trees. All of the *A. davidiana* that had made a good strong growth in the nursery made a wonderful growth after being transplanted. I budded these trees to the Walton Cling in September, 1915. They are very thrifty, fine looking trees now, much larger than any other trees of the same age, that I have in my orchard, and I picked a good crop of peaches from these trees last summer. I have planted some of the *A. davidiana* on high, sandy loam with a clay subsoil and some on very fertile, river-bottom soil. In each case they have made a strong growth and I believe it is the best root stock that we can use for our commercial orchards. I might add that all of our orchards in Sutter County are irrigated from wells so the trees have plenty of moisture during the summer months. If we could get the pits from this seedling for some of our best nurseries I am quite sure that we would have much stronger trees than we are growing at the present time, and on soil that is not too strong with alkali they will grow very successfully."

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION
WASHINGTON, D. C.

Washington Scientific Staff.

David Fairchild, Agricultural Explorer in Charge.
P. H. Dorsett, Plant Introducer, in Charge of Field Stations.
B. T. Galloway, Plant Pathologist, in Charge of Detention Laboratories.
Peter Bisset, Plant Introducer, in Charge of Distributions.
J. B. Norton, Wilson Popenoe, and H. L. Shantz, Agricultural Explorers.
R. A. Young, Plant Introducer, in Charge of Dasheen Investigations.
H. C. Skeels, Botanist, in Charge of Collections.
G. P. VanEseltine, Asst. Botanist, in Charge of Publications.
H. E. Allanson, E. L. Crandall, L. G. Hoover, R. N. Jones, P. G. Russell, and C. C. Thomas, Assistants.
Edward Goucher, Plant Propagator.

Field Stations Scientific Staff.

R. L. Beagles, Superintendent in Charge, Field Station, Chico, Cal.
E. O. Orpet, Assistant.
J. E. Morrow, Superintendent in Charge, (Yarrow) Field Station, Rockville, Md.
Edward Simmonds, Superintendent in Charge, Field Station, Miami, Fla.
Henry E. Juenemann, Superintendent in Charge, Field Station, Bellingham, Wash.
D. A. Bisset, Assistant in Charge, Field Station, Brooksville, Fla.
E. J. Rankin, Assistant in Charge, Field Station, Savannah, Ga.

Special Collaborators.

Mr. Thomas W. Brown, Cairo, Egypt; Mr. H. M. Curran, Bahia, Brazil; Mr. M. J. Dorsey, University Farm, St. Paul, Minn.; Mr. Robt. H. Forbes, Cairo, Egypt; Mr. A. C. Hartless, Seharunpur, India; Mr. E. W. D. Holway, Faribault, Minn.; Mr. Barbour Lathrop, Chicago, Ill.; Mr. H. L. Lyon, Honolulu, Hawaii; Mr. H. Nehrling, Gotha, Fla.; Mr. Charles Simpson, Littleriver, Fla.; Dr. L. Trabut, Director, Service Botanique, Algiers, Algeria; Mr. H. N. Whitford, School of Forestry, New Haven, Conn.; Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.; Dr. F. A. Woods, Boston, Mass.